

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 7387 (1974): Needle, Biopsy, Liver, Silverman's Pattern
[MHD 1: Surgical Instruments]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



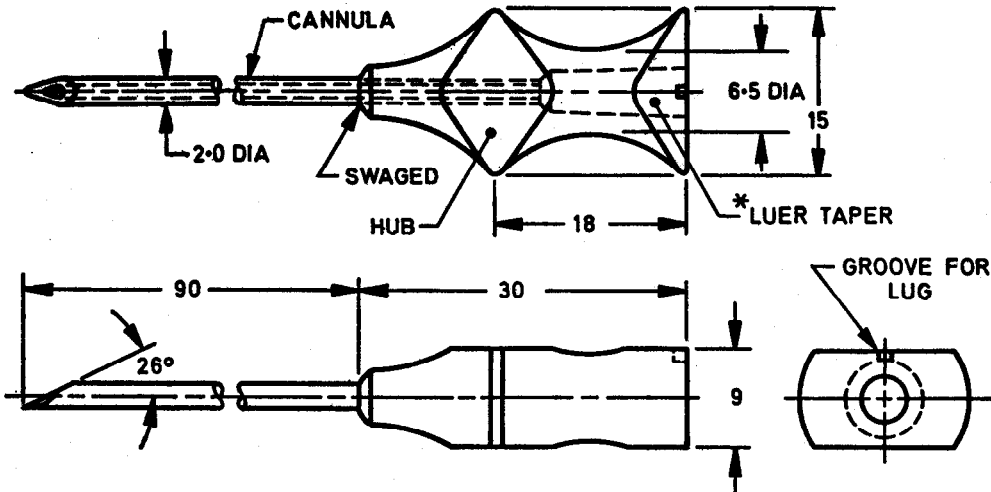


Indian Standard

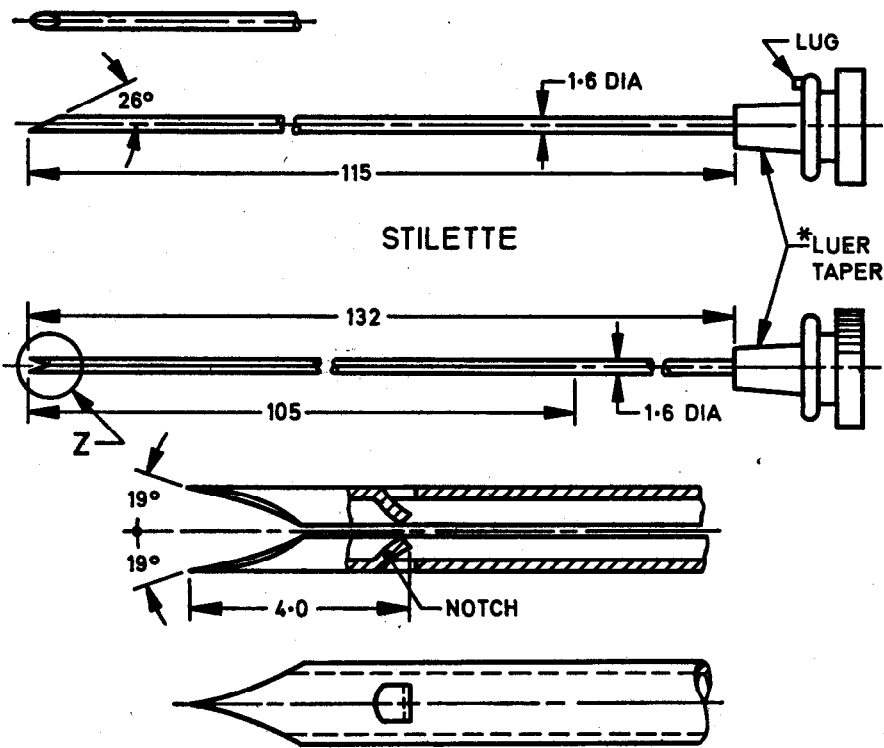
(Reaffirmed 1998)

SPECIFICATION FOR
NEEDLE, BIOPSY, LIVER, SILVERMAN'S PATTERN

1. Scope — Dimensional and other requirements for liver biopsy needle, Silverman's pattern.
2. Shape and Dimensions — As shown in Fig. 1.



PUNCTURE NEEDLE



DETAIL AT Z

BIOPSY NEEDLE

IS: 3234-1965 'Specification for conical fitting for hypodermic syringes needles and other medical equipment, Liver type'.
All dimensions in millimetres.
FIG. 1 NEEDLE, BIOPSY, LIVER, SILVERMAN'S PATTERN

Adopted 26 August 1974

© November 1974, ISI

3. Material

3.1 Puncture and Biopsy Needle — Stainless steel tubing. The stainless steel shall conform to Designation 04Cr18Ni11, 07Cr18Ni9, 04Cr17Ni12Mo2 or 04Cr17Ni12Mo2Ti20 of IS: 1570 (Part V)-1972 'Schedules for wrought steels for general engineering purposes': Part V Stainless and heat-resisting steels (*first revision*)'.

3.2 Hub — Free cutting brass rod or bar conforming to IS: 319-1968 'Specification for free cutting brass rods and sections (*second revision*)'.

3.3 Stilette — Hard drawn brass wire or stainless steel wire.

4. Conical Fitting — In accordance with IS: 3234-1965.

5. Point of Needles — The puncture and biopsy needle shall be sharpened on three aspects as shown in Fig. 1. The points on both the needles shall be well defined and free from any feather edge, irregularity and burrs when examined under $10\times$ to $15\times$ magnification.

6. Construction — The cannula shall be pushed well into the cavity of the hub and securely swaged. It shall not extend into the conical portion. The cannula and the hub shall be concentric and well aligned.

7. Finish

7.1 The cannula shall be smooth both outside and inside and free from pits, tool marks, burrs and foreign matter.

7.2 The hub shall be free from sharp edges and roughness. It shall be nickel or chromium plated both inside and outside and polished. The plating shall be such as to withstand the corrosion test given in 8.6.

7.3 Stilette shall be smooth, bright and free from foreign matter and shall slide smoothly into the cannula.

8. Tests

8.1 Leakage Test For Puncture Needle — Fit the needle to a tested syringe and connect the syringe to a source of water on which pressure could be applied. Run water through the needle point and seal it by piercing into a piece of solid rubber and apply a pressure of 2.94 bar (3 kgf/cm² approx) for 10 seconds. No leakage shall be observed at the joint of the hub and the syringe or the cannula and the hub.

8.2 Sharpness of Puncture Needle Point — Take an aluminium foil 0.02 mm thick and clean it with alcohol or benzene and mount suitably so that it is spread taut and the needle may penetrate vertically. Stand the needle vertically with its point touching the foil and ensuring that the weight of the needle did not act on the foil. Apply load on the hub gently starting with one gram. Then increase the load gradually so as to reach the test load in about 30 seconds. The needle shall penetrate the aluminium foil with a test load not exceeding 30 g.

8.3 Sharpness of Biopsy Needle Point — Introduce the puncture needle into a piece of fresh goat liver. Introduce the biopsy needle fully into the puncture needle and by rotating try to cut out a cylindrical piece of the liver. Remove the biopsy needle from the puncture needle. The cylindrical piece of liver shall be cleanly cut out and extracted out along with the biopsy needle.

8.4 Flexibility of Biopsy Needle — The split portions of the biopsy needle shall be pulled so that the tips separate by 30 mm and released. This shall be done 5 times. The needle shall not break or take a permanent set.

8.5 Security of Swaging — The swaging of the cannula of the puncture needle with the hub shall be tested by applying a pull of 9.0 kg for one minute. The cannula shall not come out of the hub and it shall not become loose.

8.6 Corrosion Resistance — The complete needle shall be immersed in a 10 percent solution of citric acid at room temperature for 5 hours. It shall then be boiled in distilled water for 30 minutes and cooled while immersed in the same for 48 hours. The cannula or hub shall show no corrosion. The test shall be conducted in a glass container.

8.7 Freedom from Foreign Matter — The cannula and the hub shall be examined under good illumination with a magnifying lens, they shall be free from foreign matter, metal particles or chips, pits, burrs and other defects.

9. Marking — The hub of the needles shall be marked with the manufacturer's identification mark.

9.1 ISI Certification Marking — Details available with the Indian Standards Institution.

10. Packing — Needles shall be packed in accordance with best trade practice and supplied with equal number of stilettes also packed suitably. The packet shall be marked with the manufacturer's name and the purpose for which the needle is to be used.